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(54) **Apparatus and method for transmitting a pilot signal in a BWA communication system using a plurality of transmit antennas**

(57) A method and system for transmitting reference signals in a BWA communication system using a first transmit antenna, a second transmit antenna, and a plurality of sub-carriers. Each of the sub-carriers occupies a sub-frequency domain. In the method, reference signals for identifying a first transmit antenna are transmitted through a second predetermined number of sub-carriers in a first mini sub-channel transmitted through the first transmit antenna and occupied by a predetermined time

domain and sub-frequency domains of a first predetermined number of sub-carriers, and reference signals for identifying a second transmit antenna are transmitted through the second predetermined number of the sub-carriers in a second mini sub-channel transmitted through the second transmit antenna and occupied by the time domain and the sub-frequency domains of the first predetermined number of sub-carriers.

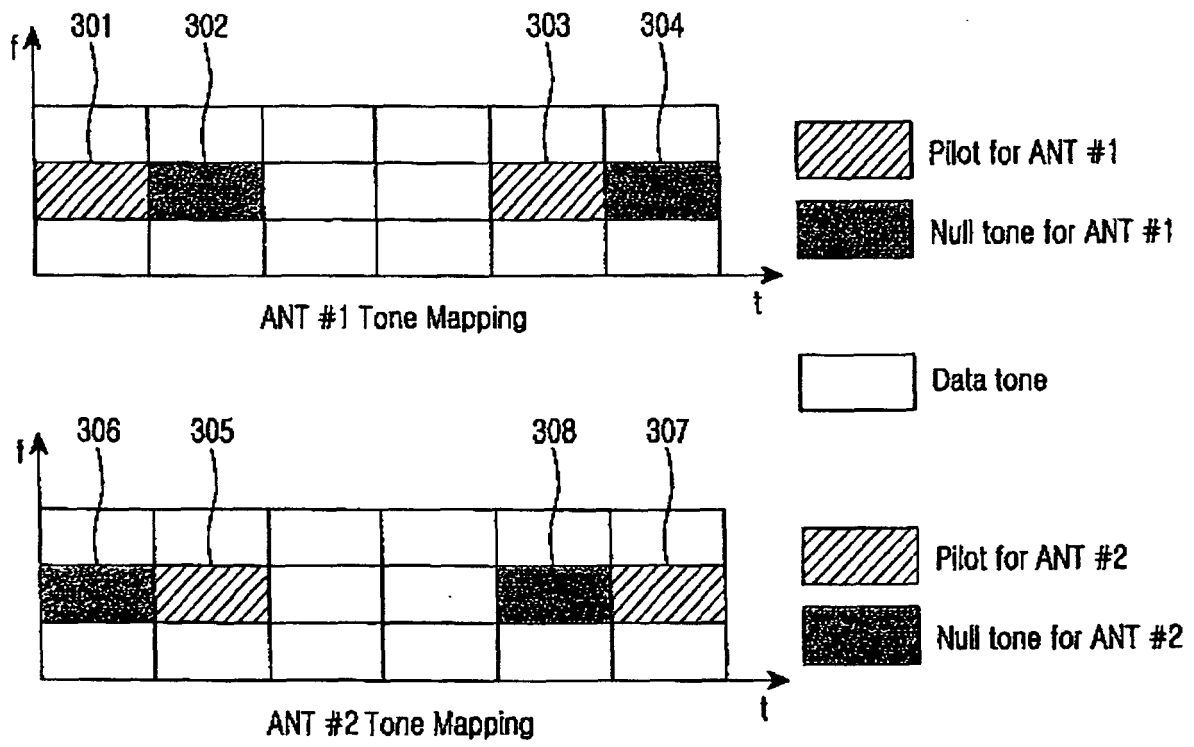


FIG.3



## EUROPEAN SEARCH REPORT

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| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                          |                                                  |                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------------------|
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Citation of document with indication, where appropriate, of relevant passages                                                                                                            | Relevant to claim                                | CLASSIFICATION OF THE APPLICATION (IPC)                                        |
| X                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | WO 03/034642 A2 (NORTEL NETWORKS LTD [CA])<br>24 April 2003 (2003-04-24)<br>* abstract *<br>* page 21, line 12 - line 34 *<br>* page 24, line 8 - page 28, line 9 *<br>* figures 3,5,6 * | 1-6,<br>15-20                                    | INV.<br>H04L1/00<br>H04L1/06<br>H04L25/02<br>H04L27/26<br>H04B7/04<br>H04B7/06 |
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| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                          |                                                  |                                                                                |
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1

EPO FORM 1503 03.82 (P04C01)

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EP 05 01 4804

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